

REMARKS

New claims 35-43 have been added to the application so that claims 1-43 are now in the application. Claims 3, 5, 8, 11-14, 18, 21-24, 28 and 31-34 have been withdrawn from consideration. The withdrawn claims exclude claims 9, 10, 19, 20, 29 and 30 which will be explained in more detail hereinbelow.

Regarding the withdrawn claims the Examiner states in paragraph 1 of the Office Action as follows:

" . . . claims 5, 8, 18, 28 and claims 9, 10, 19, 20, 29 and 30 (which depend from claims 8, 18 and 28) which do not read on the species of Embodiment 1 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species"

Claim 5 recites the cobalt iron of the spin valve transistor as being $\text{Co}_{90-50}\text{Fe}_{10-50}$. Claims 8, 18 and 28 recite the same limitation. The Applicant respectfully submits that the cobalt iron $\text{Co}_{90-50}\text{Fe}_{10-50}$ recited in these claims reads upon the cobalt iron layer 242 of Fig. 10 which is the elected species by the Applicant. The composition of the cobalt iron film layer 242 in Fig. 10 is $\text{Co}_{50}\text{Fe}_{50}$. It should be noted that the cobalt iron composition in claim 5 of $\text{Co}_{90-50}\text{Fe}_{10-50}$ is broad enough to encompass $\text{Co}_{50}\text{Fe}_{50}$ and therefore reads upon layer 242 of Fig. 10. The Applicant claims that he is entitled to claim as broad as the prior art allows provided the claim reads upon the elected species. It should be noted that the second and third species in Figs. 11 and 12 also show the cobalt iron layer of the spin valve transistor as being $\text{Co}_{50}\text{Fe}_{50}$. Accordingly, if claim 5 does not read upon the first species in Fig. 10, it also does not read upon the second and third species in Figs. 11 and 12. This would mean that claim 5 does not read upon any of the species I, II and III and therefore there is no drawing to support the recitation of claim 5. Clarification is respectfully requested by the Applicant. The same arguments also apply to claims 8, 18 and 28.

The Examiner indicated that claims 7, 17 and 27 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These claims have been so amended and should now be in condition for allowance.

Claim 9 has been amended to be dependent upon allowable claim 7; claim 19 has been amended to be dependent upon allowable claim 17; and claim 29 has been amended to be dependent upon allowable claim 27. Further, claims 10, 20 and 30 are dependent upon claims 9, 19 and 29 respectively. The Applicant respectfully submits that claims 9, 10, 19, 20, 29 and 30 should no longer be considered as withdrawn claims since claims 9, 19 and 29 read upon Species I (Fig. 10) and have been amended to be dependent upon allowable claims 7, 17 and 27.

New claims 35-43 have been added which read upon species I (Fig. 10). New claims 35, 38 and 41 have been made dependent upon allowable claims 9, 19 and 29 respectively and are considered to be allowable since claims 9, 19 and 29 are dependent upon allowable claims 7, 17 and 27. Claims 9, 19 and 29 recite the cobalt iron (CoFe) film of the spin valve transistor as being $\text{Co}_{50}\text{Fe}_{50}$ which is shown at layer 242 in Fig. 10. Claims 36, 39 and 42, which are dependent upon claims 35, 38 and 41 read upon Fig. 10 by reciting the barrier layer 206 as being located between the emitter 204 and the base 200 for conducting hot electrodes from the emitter to the base wherein the hot electrodes have an energy level above Fermi levels of the layers of said base. This is described in Applicant's specification at page 9, lines 14-20 wherein it is stated:

"The purpose of the barrier layer 206 is to ensure that only hot electrodes from the emitter 204 are injected into the base 200. These hot electrodes have an energy level which is above the Fermi levels of the layers in the base, as discussed hereinabove. The Fermi level of a particular layer depends upon the band structure of the layer which, in turn, depends upon certain concentrations of the majority and minority electrons. Electrons which have energy levels below the Fermi levels will not pass through the layers of the base 200. . . ."

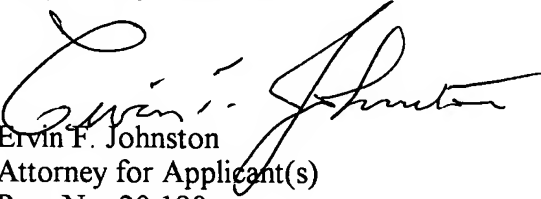
Claims 37, 40 and 43, which are dependent upon claims 36, 39 and 42, read upon Fig. 2 by reciting the first and second AP pinned layers 214 and 216 as having the same magnetic thickness. This is addressed in Applicant's specification at page 10, lines 10 and 11, wherein it is stated:

" . . . A further aspect of the invention is that the first and second AP pinned layers 214 and 216 have equal magnetic thicknesses."

Please note that the undersigned has a new telephone number which is **808-661-1197**.

The Examiner is respectfully requested to contact the undersigned should there be any questions regarding this Amendment.

Respectfully submitted,



Ervin F. Johnston
Attorney for Applicant(s)
Reg. No. 20,190
Telephone: 808-661-1197
Fax: 808-661-9797